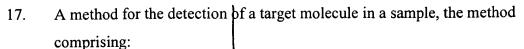
What is claimed is:

- A two dimensional array comprising molecules bound to a porous material surface; wherein:
 the array contains at least about 100 different molecules; and each of the different molecules is bound in a different predetermined region of the surface.
- 2. The array of claim 1, where the porous material comprises alumina and silica.
- 3. The array of claim 1, wherein the porous material is made from alumina, silica, and boron.
- 4. The array of claim 1, wherein the porous material is made from a composition comprising about 1% to about 50% by weight alumina, about 50% to about 98% by weight silica, and about 1% to about 5% by weight boron.
- 5. The array of claim 1, wherein the mean pore diameter of the porous material is greater than about 10 microns.
- 6. The array of claim 1, wherein the density of the porous material is at least about 6 pounds per cubic foot (96.1 kg/m³).
- 7. The array of claim 1, wherein the exposed surface is at least about 50% silicon dioxide.
- 8. The array of claim 1, wherein the exposed surface is at least about 75% silicon dioxide.
- 9. The array of claim 1, wherein the exposed surface is at least about 95% silicon dioxide.
- 10. The array of claim 1, wherein the molecules are oligonucleotides.
- 11. The array of claim 1, wherein the molecules are peptides.
- 12. The array of claim 1, wherein the molecules are oligosaccharides.
- 13. The array of claim 1, wherein the molecules are DNA.
- 14. The array of claim 1, wherein the molecules are RNA.
- 15. The array of claim 1, wherein the molecules are proteins.
- 16. The array of claim 1, wherein the polecules are antibodies.

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obtaining a two dimensional array comprising molecules bound to a porous material surface, wherein:

the array contains at least about 100 different molecules;

at least one of the different molecules is a partner molecule which binds to the target molecule; and

each of the different molecules is bound in a different predetermined region of the surface;

contacting the array and the sample to produce a partner molecule - target molecule complex; and

detecting the partner molecule - target molecule complex.

- 18. The method of claim 17, wherein the partner molecule is covalently bound to the porous material.
- 19. The method of claim 17, wherein the porous material comprises alumina and silica.
- 20. The method of claim 17, wherein the porous material is made from a composition comprising alumina, silica, and poron.
- The method of claim 17, wherein the porous material is made from a composition comprising about 1% to about 50% by weight alumina, about 50% to about 98% by weight silica, and about 1% to about 5% by weight boron.
- 22. The method of claim 17, wherein the mean pore diameter of the porous material is greater than about 10 microns.
- 23. The method of claim 17, wherein the exposed surface is at least about 50% silicon dioxide.
- 24. The method of claim 17, wherein the exposed surface is at least about 75% silicon dioxide.
- 25. The method of claim 17, wherein the exposed surface is at least about 95% silicon dioxide.
- 26. The method of claim 17, wherein the partner molecule is a peptide.
- 27. The method of claim 17, wherein the partner molecule is an oligosaccharide.

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- 29. The method of claim 17, wherein the partner molecule is an antibody.
- 30. The method of claim 17, wherein the partner molecule is an oligonucleotide.
- 31. The method of claim 17, wherein the partner molecule is DNA.
- 32. The method of claim 17, wherein the partner molecule is RNA.
- 33. The method of claim 17, wherein the partner molecule target molecule complex is detected by fluorescence.
- 34. The method of claim 17, wherein the partner molecule target molecule complex is detected by radioactivity.
- 35. The method of claim 17, wherein the partner molecule target molecule complex is detected by visible spectroscopy.
- 36. The method of claim 17, wherein the partner molecule target molecule complex is detected by ultraviolet spectroscopy.